

GAO

Report to the Chairman and Ranking
Minority Member, Subcommittee on
Readiness and Management Support,
Committee on Armed Services
U.S. Senate

November 2000

DEFENSE ACQUISITIONS

Price Trends for Defense Logistics Agency's Weapon System Parts



G A O

Accountability * Integrity * Reliability

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United States General Accounting Office
Washington, D.C. 20548

November 3, 2000

The Honorable James M. Inhofe
Chairman
The Honorable Charles S. Robb
Ranking Minority Member
Subcommittee on Readiness and Management Support
Committee on Armed Services
United States Senate

This is the second in a series of reports responding to your request that we review allegations of significant increases in prices the Department of Defense (DOD) pays for weapon system spare parts.¹ In particular, some military commands have asserted to the Congress that spare part prices have been increasing at a higher rate than inflation and have taken an unanticipated bite out of the limited funds available to meet readiness requirements. You requested that we examine the Defense Logistics Agency's (DLA) spare part prices to (1) determine whether prices were increasing over time and (2) identify the factors that contributed to price increases.

DLA provides parts and related services to the military services, DOD agencies, and other government entities. DLA purchases items from vendors and sells them to its customers at a standard price. This standard price is the amount that customers must pay to purchase the item and is computed by adding a surcharge² to the latest representative price that DLA paid to a vendor for the item. This surcharge is imposed by DLA to recover such costs as storage, transportation, and inventory loss. Each standard price appears in a computerized federal pricing catalog. Many customers use the catalog to review the prices of items they plan to buy.

This report focuses specifically on "consumable" spare parts. These are parts that are consumed in use or discarded when worn out or broken because they cannot be cost-effectively repaired. To evaluate price trends

¹ *Earlier this year we issued a report entitled Defense Acquisitions: Prices of Marine Corps Spare Parts Have Increased (GAO/NSIAD-00-123, July 31, 2000).*

² The surcharge is technically called the "cost recovery rate."

for consumable items, we selected for review weapon system spare parts with at least one DLA procurement in 1996, 1997, or 1998. For each part, we collected and analyzed its pricing history from 1989 through 1998. (Not all parts had a pricing history for the full 10-year period). In fiscal year 1998, for example, our universe consisted of 317,217 parts, of which about 237,000 were requisitioned by DLA's customers.³ Requisitions totaled about \$1.5 billion that year. Due to data limitations, we excluded from our review items that had been transferred to DLA from the military services.⁴ We took several steps to address data quality and reliability; however, we did not validate or verify the pricing data provided by DLA.⁵ See appendix I for details on our scope and methodology.

Results in Brief

From 1989 through 1998, an average of 70 percent of parts requisitioned by DLA's customers experienced an annual price change of less than 5 percent. This trend applied to all parts requisitioned as well as those in frequent demand and in specific supply categories, such as aircraft parts.

A relatively small number of parts experienced significant annual price increases, that is, increases of 50 percent or more. However, this number has grown since 1994. A very small percentage experienced "extreme" increases in price, that is, 1,000 percent or more. In 1998, for example, 2,993 of the 236,896 requisitioned parts we reviewed had a price increase of 1,000 percent or more. Parts with these kinds of extreme price increases did not represent a large portion of DLA customer spare part spending and they generally did not include higher priced items. Nevertheless, because customers are often unaware of such increases until they actually purchase a part, they experience "sticker shock" and they have raised concerns about extreme price increases to DLA. Moreover, for some operating units, such price increases can potentially affect their ability to buy needed parts.

When we analyzed 100 weapon system spare parts with price increases of 1,000 percent or more, we found that in 64 cases, price estimates that were

³ We used annual demand quantity, the best available data for the 10-year period. Annual demand quantity does not account for all canceled or unfilled requisitions.

⁴ Other studies have addressed this issue and results of these studies are included in app. II.

⁵ Our recent testimony discusses long-standing problems with DOD's ability to accumulate and report on the value of its inventories. See *Department of Defense: Progress in Financial Management Reform* (GAO/T-AIMD/NSIAD-00-163, May 9, 2000).

made for new parts when a weapon system was fielded turned out to be inaccurate once the actual procurement was made. In other cases, we found that prices increased dramatically when there were long time periods—sometimes decades—between procurements and/or when there were substantial changes in the quantity of parts purchased. DLA purchasing officials also cited a range of other cost drivers that have led to substantial price increases, including costs associated with retooling when there is a long time between buys and increased costs related to emergency procurements and raw materials.

We are making recommendations to encourage DOD to determine the cost-effectiveness of ensuring that catalog prices are more accurate and of making customers aware that certain prices may be inaccurate. In written comments on a draft of this report, DOD concurred with our findings and recommendations.

Background

DLA, headquartered in Fort Belvoir, Virginia, provides consumable supplies, spare parts, and technical and logistics services to the military services, DOD agencies, federal civil agencies, and selected foreign governments. As part of its mission, the agency manages over 4.1 million consumable items for its customers to support their weapon systems and other assets. These parts range from low-cost commonly used items, such as fasteners and gasket material, to high-priced, sophisticated spare parts, such as microswitches, miniature components, and precision valves—all of which are vital to operating major weapon systems. Spare parts are received, stored, and shipped from 24 distribution depots. Three supply centers manage the consumable hardware items that are the subject of this report: the Defense Supply Centers in Columbus, Ohio; Philadelphia, Pennsylvania; and Richmond, Virginia.

DLA's supply management operations are part of the Defense-Wide Working Capital Fund, which operates on a revolving fund principle. The goal of the revolving fund is to financially break even over the long term. Customers use appropriated funds to buy parts from DLA. DLA then uses revenue it receives from customers to procure parts from vendors. In principle, DLA should recover the acquisition cost of the parts it sells, as well as its own operating costs, from its customers while not making a profit or incurring a loss.

Most Spare Parts Incurred Small Price Change

About 70 percent, on average, of spare parts requisitioned by DLA's customers experienced an annual price change of less than 5 percent from fiscal years 1989 through 1998. This trend was consistent for parts with frequent demand and all categories of parts examined. At the same time, we found that the number of parts with significant price increases—though relatively small—has steadily increased, and that, for some parts, price increases have been extremely high.

Most Spare Parts Experienced Price Change of Less Than 5 Percent

Of the parts requisitioned in fiscal years 1989 through 1998, an average of about 70 percent experienced an annual price change of less than 5 percent across the 10-year period. The percentage of parts with annual price increases of 50 percent or more was relatively small during this time period, but it has grown in recent years. During this same period, the Producer Price Index ranged from a positive 2.6 percent to a negative 0.4 percent.

Figure 1 illustrates the percentage of price changes. As shown in the figure, the number of parts with requisitions in our analysis universe increased over the 10-year period. Figure 2 illustrates the median price change, which stayed within the 3-percent to 5-percent range in most years.⁶

⁶ The median is the midpoint in a distribution. That is, it is the point above which and below which one-half of the data fall. The median is a useful measure of price change, but it is not an average. In our case, the mean was highly skewed due to the presence of items with extreme price changes (see p. 12). For this reason, we believe the median is a more appropriate measure of price change for the population as a whole.

Figure 1: Percentage of Price Change for Parts Requisitioned

Percent of spare parts

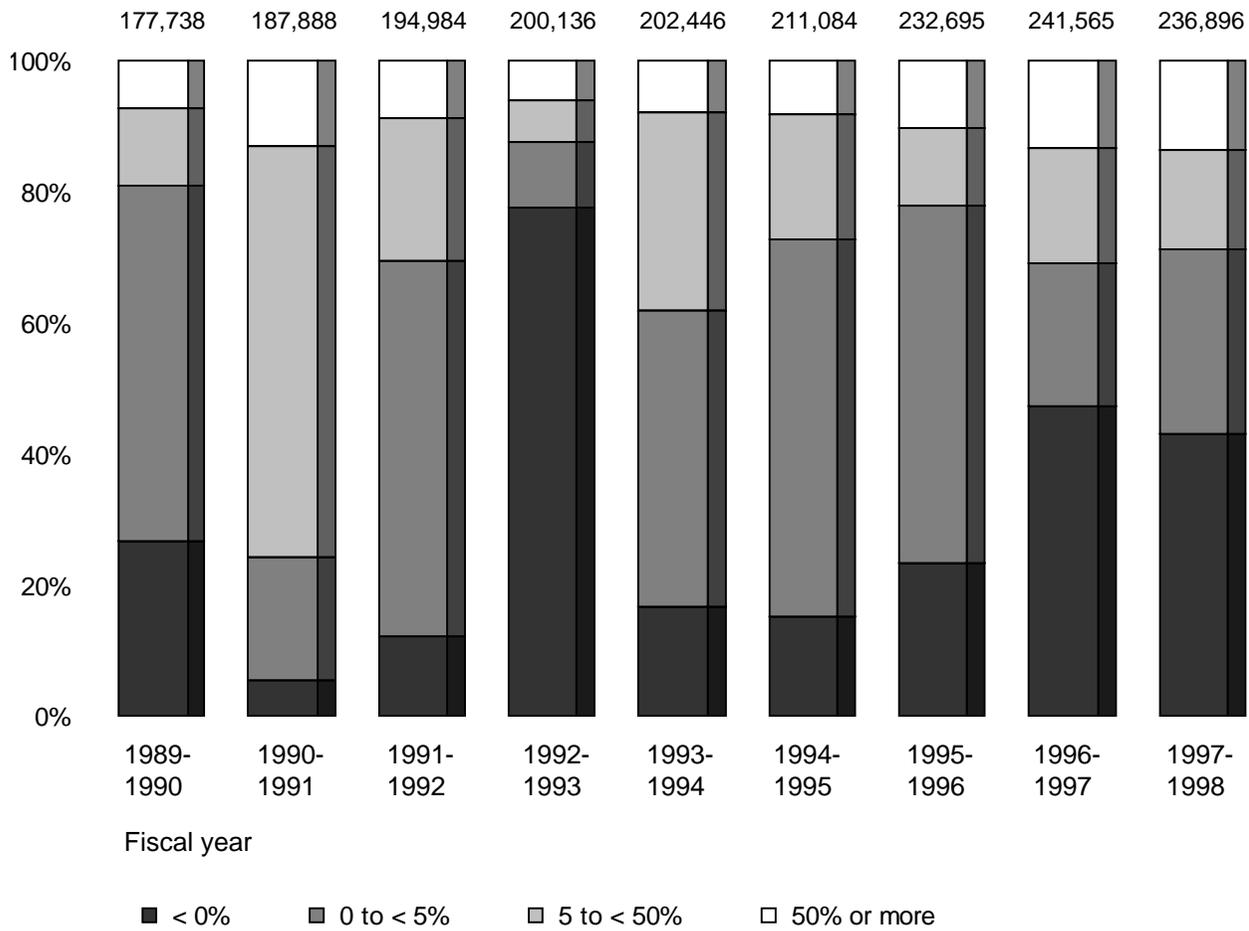
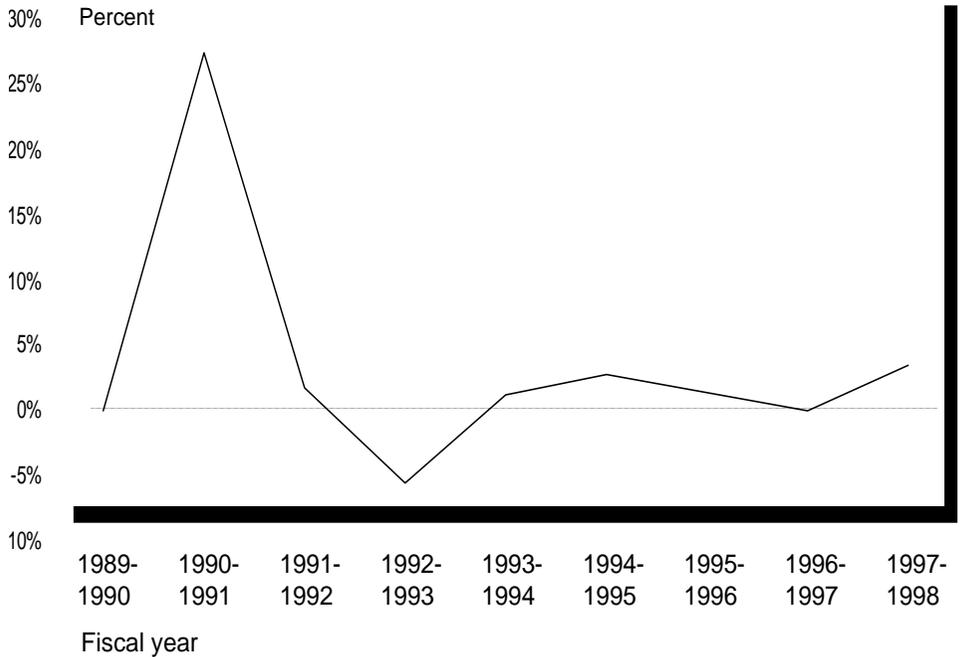


Figure 2: Median Price Change for Parts Sold



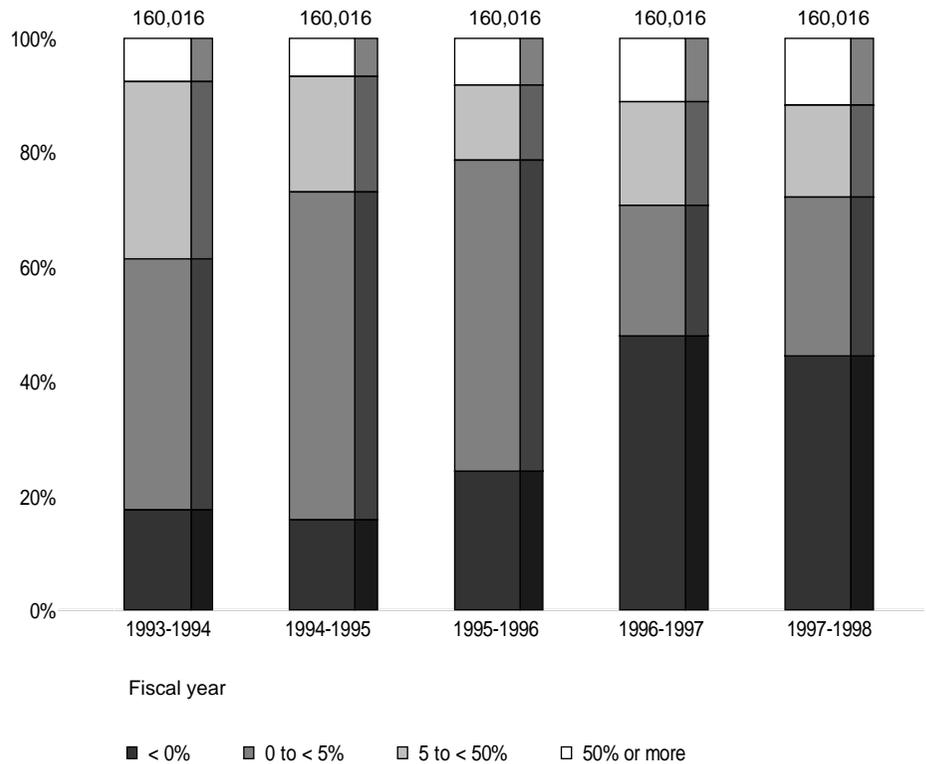
As illustrated in figures 1 and 2, there were 2 fiscal years in which prices did not follow the same trend. Specifically, prices increased substantially in fiscal year 1991 and decreased substantially in fiscal year 1993. The 1991 price increase was attributable to a 1989 DOD decision to include supply operations costs (that is, the cost of purchasing, storing, and distributing items) in the surcharge. Prior to this decision, all operating costs of supply activities were financed through operations and maintenance accounts. DLA officials attributed the 1993 price decrease to a decline in operational costs at the supply centers and an increase in the sales base. The increase in the sales base was partly due to the transfer of consumable items from the military services to DLA in 1992. This transfer was intended to eliminate duplication in managing DOD's consumable items by consolidating these items within DLA. Surcharge rates at DLA's supply centers decreased as a result of the transfer since costs were spread over a larger number of DLA-managed items. Appendix II discusses this transfer in greater detail.

Parts in Frequent Demand Followed Same Trend

Our analysis also found that spare parts in frequent demand by DLA's customers experienced price trends similar to the overall universe of parts. Of the spare parts included in our review, 160,016 had requisitions every fiscal year from 1993 to 1998. We used fiscal year 1993 as a base year because we wanted to review spare parts with recent, consistent requisitions. Our analysis showed that over 70 percent of the parts, on average, had an annual price change of less than 5 percent over the 6-year period. Additionally, the number of parts in frequent demand whose price increased 50 percent or more has grown steadily.

Figure 3: Price Change for Parts With Frequent Demand

Percent of spare parts



Price Trend for Parts in Six Supply Groups

Because a number of military commands have been specifically concerned about high prices for aircraft parts, we reviewed spare part prices in three federal supply groups that contained these types of parts. In addition, we examined price trends in the three federal supply groups that had the highest dollar value of requisitions in fiscal years 1996 through 1998.⁷ Altogether, these six groups accounted for about 53 percent of the total value of requisitions in those years.

Our analysis of price changes for the six groups revealed results similar to our other analyses. That is, an average of 70 percent of the parts requisitioned over our 10-year review period experienced an annual price change of less than 5 percent. As with the overall universe of parts requisitioned, the number of parts in these groups with annual price increases of 50 percent or more has grown. Table 1 illustrates this trend by specific federal supply groups.

Table 1: Price Trends of Specific Federal Supply Groups for Fiscal Years 1989 to 1998

Name of group	Percent of parts with price change of less than 5 percent
Aircraft and airframe structural components	71.6
Aircraft components and accessories	70.9
Aircraft launching, landing, and ground handling equipment	73.3
Pipe, tubing, hose and fittings	69.9
Hardware and abrasives	66.1
Electrical and electronic equipment components	71.2
Average for the six groups	70.5

Finally, we analyzed the prices for all weapon system spare parts managed by DLA—regardless of whether they had requisitions in some or all of the fiscal years reviewed. Our analysis revealed that, on average, 72 percent of the spare parts had an annual price change of less than 5 percent over the 10-year period. Again, the number of parts with annual price increases of

⁷ Federal Supply Groups are a broad designation, identifying the commodity area covered by the classes within the group. Each class covers a relatively homogeneous area of commodities, e.g., in respect to their physical or performance characteristics.

50 percent or more has been growing. A figure depicting these data is included in appendix VI.

Percentage of Parts With Significant Price Increases Has Grown

As noted earlier, the number of parts with significant annual price increases—50 percent or more—represents a relatively small portion of DLA-managed parts. However, this number has grown steadily in recent years. By 1998, nearly 14 percent of the requisitioned parts fell into this category, compared with 8 percent in 1995.

Most of the 32,394 items with price increases of 50 percent or more in 1998 were relatively inexpensive. As shown in table 2, about half of the items cost less than \$50 and only about 6 percent cost more than \$1,000.

Table 2: Unit Prices of Items With Price Increase of 50 Percent or More in 1998

Unit price range	Number of items	Percent of total items	Cumulative percent of total items
Less than \$1	1,512	4.7	4.7
\$1 to \$4.99	4,125	12.7	17.4
\$5 to \$19.99	6,449	19.9	37.3
\$20 to \$49.99	5,378	16.6	53.9
\$50 to \$99.99	4,216	13.0	66.9
\$100 to \$199.99	3,473	10.7	77.6
\$200 to \$999.99	5,261	16.2	93.8
\$1,000 or more	1,980	6.2	100.0
Total	32,394	100.0	

In addition, the items that have had these substantial price increases do not represent a large proportion of DLA's business. In 1998, customers requisitioned a total of \$1.5 billion for spare parts. About \$193 million of this amount was for parts with price increases of 50 percent or more, whereas \$944 million was for parts with price changes of less than 5 percent.

Most parts that increased 50 percent or more did not experience this level of escalation in more than 1 year. Of the parts requisitioned by customers with increases at this rate in any given year from fiscal years 1989 through 1998, 83 percent experienced an increase of this magnitude only once.

Sixteen percent experienced the increase twice over the 10-year period. Of parts with frequent demand, 91 percent increased at this rate only once from fiscal years 1993 through 1998, and 9 percent experienced the increase twice during the period.

Nevertheless, the extent of these increases was extreme in some cases. From fiscal years 1989 through 1998, the average percent change, as measured by the mean, was 344 percent. This number is skewed upwards because of the presence of parts with extremely high price increases—in some cases exceeding 1 million percent. In fiscal year 1998, 2,993 parts requisitioned by customers had a price growth of 1,000 percent or more. Appendix IV shows the mean percent price change.

Factors Contributing to Substantial Price Increases

A number of factors contributed to the substantial price increases in some weapon system spare parts. First, price estimates made for new spare parts during the initial stages of a weapon system procurement, which are entered into the DOD pricing catalog, often turn out to be far lower than the actual price. Second, prices increase dramatically when there are long time periods between procurements and/or when there are substantial changes in the quantity of parts being purchased. DLA purchasing officials also cited a range of cost drivers that can lead to substantial price increases, such as cost increases related to emergency procurements and raw materials. For some operating units, unexpected sharp price increases can potentially limit their ability to buy needed spare parts.

Many Extreme Increases Are Due to Inaccurate Price Estimates

Our analysis of a random sample of spare parts that had extreme price increases showed that most increases were caused by inaccurate price estimates. To determine the cause of extreme price increases, we selected a sample of 100 requisitioned spare parts whose prices had risen 1,000 percent or more between fiscal year 1997 and 1998. (See app. V for a list of these parts.) At our request, DLA reviewed procurement data and contract files to determine the reasons for these extreme price increases. In 64 of the 100 cases, a contractor had provided the price estimate for a new part. When DLA procured the part for the first time, the price was substantially higher than the estimate.

Some estimated prices are obviously inaccurate, but others appear logical, offering no hint that the actual price may be many times higher. In 1998, for example:

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- The initial estimated price of a washer was \$0.05, but the actual price turned out to be \$182.13.
 - The estimated price of a digital microcircuit was \$21.92, but the actual price turned out to be \$802.75.
 - The estimated price of a blind rivet was \$67.83, but the actual price was \$1,775.39.
 - The estimated price of a liquid indicator sight was \$28.75, but the actual price was \$4,214.70—an increase of 14,560 percent.

DOD officials cited several possible reasons for the discrepancies between estimated and actual prices. First, they stated that the military services do not have the manpower and resources needed to perform a thorough price scrub for all new items the contractor provides when the weapon system is initially delivered to DOD. (This is known as the “initial provisioning” process, under which the contractor and the military service identify the items that are needed to support and maintain a weapon system for an initial period of service.) The estimated prices are nevertheless entered into the DOD pricing catalog. In addition, DOD officials suggested that the contractors’ acquisition methods may differ significantly from DLA’s. For example, the contractor may obtain a discount on certain items due to a large quantity buy—resulting in a price increase if DLA’s initial procurement is for a small quantity of the same item. In other cases, neither the contractor nor DOD expects that the item will ever be procured again. In such instances, a “plug” factor of \$0.01 or \$0.99 is entered into the pricing catalog.

Prices Are Not Identified as Estimates in Catalog

Estimated prices are not identified as “estimates” in the DOD pricing catalog for spare parts. As a result, customers checking the price of an item have no way of knowing that the price is merely an estimate and experience “sticker shock” when they learn that the actual price they must pay is substantially higher than the catalog price. DLA headquarters officials, as well as pricing specialists and buyers at the Defense Supply Centers, told us that they receive many complaints from customers regarding the large discrepancies between catalog prices and actual procurement prices and that this problem has existed for many years.

In 1998, a DLA employee submitted a quality improvement suggestion to specify whether the catalog prices were estimated or actual so that customers would know what price they could expect to pay. Although the Defense Supply Center-Philadelphia and the Defense Logistics Information Service approved this suggestion, it was rejected by the Defense Logistics Support Command on the basis of an estimated implementation cost of

\$700,000 and a 6-year time frame. An official from the command told us that, because there is no placeholder in the catalog to identify price estimates, a system change request would have to be implemented. Such a system change would require the involvement of all military services.

The practice of not identifying estimated prices in the catalog has also hampered DLA's ability to select apparent price anomalies for analysis and corrective action. For example, the Defense Logistics Information Service, which maintains the pricing catalog for all DOD spare parts, annually distributes a list of the 1,000 parts with highest percent price increases to each DLA Defense Supply Center and military service to aid them in purging incorrect prices from the system. However, pricing specialists at the centers told us that they generally make little use of the list because experience has shown that most price increases are due to estimates followed by actual procurements.

DLA officials stated that if price estimates were identified, customers would be more likely to call the item manager to obtain a more accurate price, a process that would assist them in managing their budgets. Furthermore, identifying price estimates would also assist the supply centers in their efforts to conduct price trend analyses. The officials also stated that an effort should be made to obtain more accurate prices in the first place. Recently, at our request, a provisioning policy group, a team of representatives from DLA and the military services, discussed the fact that price estimates in the catalog are often inaccurate and are not identified as estimates. The group plans to form a team to address these issues. In addition, DLA is developing a contract pricing tool to produce more accurate price estimates. If development goes according to plan, the tool may prove useful for evaluating initial provisioning price estimates for new parts.

Long Time Between Procurements Causes Extreme Price Increases

DLA procures many of its spare parts infrequently. According to DLA officials, this is primarily because (1) DLA buys large quantities of an item when a new weapon system is fielded and has no need to buy the item again for many years and (2) there is reduced demand for selected items as older weapon systems are phased out of service. Because some parts are purchased infrequently, their prices may remain relatively unchanged for many years. When DLA procures these parts again, prices can increase substantially due to years of inflation and other factors such as a change in material, the need to retool, or a new technology. In addition, in many cases, DLA purchases initial spares in large quantities—sometimes at a

discounted price. Subsequent buys, sometimes many years later, may be for much smaller quantities to support a smaller number of units of a fielded weapon system. Historically, unit prices tend to be higher on purchases that involve smaller quantities.

When DLA has sufficient stock on hand to issue to customers without making a new procurement, the price the customer pays is the latest acquisition cost plus the current year's surcharge rate, even if that acquisition cost was incurred many years before.⁸ If such an item is no longer in stock and DLA must make a procurement, the customer, in most cases, will be charged the new, sometimes surprisingly higher, price.

Of the 100 parts in our random sample of parts, 30 were identified by DLA as having had 3 or more years between procurements. Of these items, 21 experienced more than 10 years between buys. For example:

- A set screw increased from \$0.05 in 1997 to \$17.72 in 1998, an increase of 35,340 percent. DLA had not procured this item for 31 years; its 1997 price was based on a 1966 purchase.⁹
- A machine bolt increased from \$0.46 in 1997 to \$139.83 in 1998, a price jump of 30,298 percent. This item had not been procured in 21 years.

Some DLA officials are considering the feasibility of capturing inflation on an annual basis so that items with many years between procurements would have a more gradual price increase, mitigating sticker shock. According to officials in the Office of the Under Secretary of Defense (Comptroller), military services have tried in the past to add an annual inflation rate to the prices of the items they manage, but the efforts were unsuccessful and resulted in overpricing. However, the officials stated that they are awaiting a DLA proposal that would measure the impact of this problem.

⁸ The Defense Supply Centers do not have a uniform policy for updating prices; for example, the Richmond Center does not update prices—even to reflect the current surcharge rate—for items that have not had customer demand in the past 2 years.

⁹ DLA officials noted that for items with many years between procurements, quantity can also play a role in the price increase. For the set screw, for example, the 1966 procurement had been based on a purchase of 8,400 items, compared to only 50 items in the more recent procurement.

Quantity Changes Contributed to Substantial Price Increases

Of the 100 items in our sample, 26, according to DLA, had quantity changes that affected the unit price. In many cases, the quantity changes also occurred on items with a long time between procurements. For example:

- A change in the quantity of compression springs being purchased by DLA contributed to a 5,479-percent price hike. Specifically, in 1998, customers were charged \$16.18 for each spring based on a DLA purchase of 60 units. Previously, they were charged 29 cents a spring based on a DLA purchase of 3,000 units.
- A change in the quantity of electric connector plugs led to a 1,127-percent price hike. In 1998, customers were charged \$306.08 based on a DLA purchase of one connector. Previously, they were charged \$24.94 based on a purchase of 10 connectors.
- A change in the quantity of a transistor procured by DLA caused a 1,525-percent price increase. In 1998, customers were charged \$440.70 based on a DLA purchase of three transistors. Previously, they were charged \$27.12 based on a procurement of 250 transistors.
- A change in the quantity of a cable clamp adapter caused a 1,039-percent increase. In 1998, customers were charged \$1,134.01 based on two small-quantity DLA procurements. Previously, they were charged \$99.55 for the item.
- A change in the quantity of a threaded pin rivet caused a 2,032-percent price increase. In 1998, customers were charged \$30.28 based on a DLA purchase of 15 rivets. Previously, they were charged \$1.42 based on a procurement of 4,000 rivets.

DOD officials noted that, in some cases, it may be a wise business decision to purchase a limited quantity of some spare parts—even if the unit price was high compared to historical costs. For example, smaller quantities of some spare parts may be needed for an aging weapon system with a scheduled retirement date.

Other Factors Can Cause Price Increases

In addition to the reasons identified in our sample of 100 parts, DLA purchasing officials cited several other factors that can cause customer prices to increase. These include the following.

- Costs related to first article testing, which is performed on a new item or an item that has not been procured in many years to ensure that the contractor can produce the item to specifications.
- Costs related to emergency procurements, where delivery of a part must be accelerated if the customer needs an out-of-stock part quickly.

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- Increases in raw material costs.

The officials emphasized that several factors can work in tandem to create a large price increase. For example, an air duct assembly, used on the Apache helicopter, increased in price from \$220 in 1997 to \$7,568—or 3,340 percent—in 1998.¹⁰ This item, which was included in the Defense Logistics Information Services' list of parts with extreme price increases, had been transferred to DLA from the Army. According to DLA officials, the price hike was attributable to the fact that (1) there were 9 years between procurements, (2) the vendor had to set up and retool machinery to make the part, (3) the part required first article testing, and (4) there was a quantity reduction from 61 in 1988 to 4 in 1997.

Conclusions

The majority of DLA's weapon system spare parts experienced a relatively low annual price change—less than 5 percent—from fiscal years 1989 through 1998. At the same time, however, a small but growing number of parts are increasing in price. Most of the extreme price increases are due to inaccurate price estimates, outdated prices, or changes in quantities purchased. Nevertheless, because the DOD pricing catalog does not identify estimated or substantially outdated prices, the customers buying these items are often surprised to find that they are paying significantly more than they expected for parts that are essential to maintaining their weapon systems. Moreover, for some operating units, this could have an adverse effect on their ability to buy needed spare parts.

Recommendations for Executive Action

We recommend that the Secretary of Defense determine (1) why initial provisioning price estimates differ significantly from the price DLA pays upon procuring the item and how to include more accurate initial provisioning estimates in DOD's pricing catalog, (2) a cost-effective method of adjusting catalog prices to account for inflation for items that DLA has not procured in many years, and (3) whether estimated and outdated prices can be cost-effectively identified as such in the catalog so that customers will be aware that the prices may be incorrect. One way to make these determinations is to establish a task force with membership representing

¹⁰ This item was not included in our data analysis because it was a consumable item transfer part, but it illustrates the effect of numerous factors on price.

the Office of the Secretary of Defense, the military services, and DLA. The task force could report its findings to the Secretary of Defense.

Agency Comments

In written comments on a draft of this report, DOD concurred with our principal findings and recommendations. The Department also provided technical comments, which we have incorporated where appropriate. DOD's written comments appear in appendix IX.

We are sending copies of this report to the appropriate congressional committees; the Honorable William S. Cohen, Secretary of Defense; Lieutenant General Henry Glisson, Director, Defense Logistics Agency; the Honorable Richard Danzig, Secretary of the Navy; the Honorable F. Whitten Peters, Secretary of the Air Force; the Honorable Louis Caldera, Secretary of the Army; General James L. Jones, Commandant of the Marine Corps; and the Honorable Jacob J. Lew, Director, Office of Management and Budget.

Please contact me at (202) 512-4125 if you or your staff have any questions concerning this report. An additional GAO contact and staff acknowledgments are listed in appendix X.



David E. Cooper, Director
Acquisition and Sourcing Management

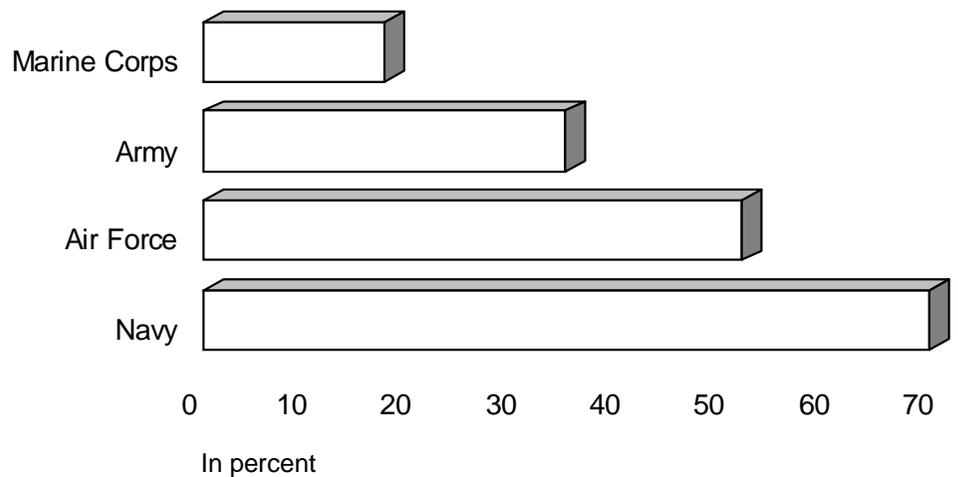
Scope and Methodology

To determine the extent to which consumable spare part prices have increased, we selected for review a “market basket” of items. Since the Defense Logistics Agency (DLA) does not purchase every spare part each year, our market basket consisted of all the weapon system spare parts purchased by DLA during fiscal years 1996 through 1998—the most current data available at the time we initiated this review. Our initial market basket contained about 482,000 items representing 25 federal supply groups and 184 federal supply classes.

We removed from further analyses about 85,000 parts that had been transferred to DLA from the military services because these parts generally had very limited price histories. Other items were removed that had unit of issue changes from one year to the next, missing prices, and zero quantity and/or dollar sales. We also removed those items with duplicate records. These steps left 391,217 consumable weapon system spare parts.

To ensure that our universe contained spare parts used by each military service, we identified the users of each of the 391,217 parts in our database for fiscal year 1998. Some parts were used by more than one service. Figure 4 shows the percentage of parts used by each of the military services.

Figure 4: Percentage of Spare Parts Used by Each Military Service



DLA provided us with 10 years of purchase and pricing data for each item in our market basket. DLA extracted the data, covering fiscal years 1989-98, from its Standard Automated Materiel Management System.¹ To determine if the prices of our selected items had increased, decreased, or remained unchanged, we calculated the average annual change in standard prices over our 10-year review period.

To perform other price trend analyses, we refined our universe of 391,217 spare parts into two other categories. The first contained 236,896 items customers had requisitioned in each of the paired fiscal years in our review period. The second contained 160,016 spare parts that customers had requisitioned every fiscal year from 1993 to 1998. We refer to these as parts in frequent demand.

In addition, to determine why some spare parts experienced extremely high price increases, we randomly selected 100 items from a universe of 2,993 parts whose prices increased 1,000 percent or more between fiscal year 1997 and 1998. The reasons for these extreme price increases were determined by DLA through research of its centralized procurement history database, supplemented by a review of contract files located at the respective defense supply centers.

In developing our methodology, we worked extensively with DLA officials from the headquarters Procurement Management Directorate at Fort Belvoir, Virginia, and with analysts from the Office of Operations Research and Resource Analysis in Richmond, Virginia.

We did not validate or verify the pricing data provided by DLA. However, we took several steps to address data quality. We reviewed the data and performed various quality checks that revealed several errors and discrepancies in the composition of our database and in prices or quantities of specific spare parts. These errors and discrepancies were discussed with DLA officials, and the affected items were deleted from our universe of spare parts. We also asked DLA officials to complete a questionnaire concerning reliability of data contained in its Standard Automated Materiel Management System. This questionnaire covered such topics as frequency of system edits, audits, and historical reliability of each of the automated files from which our data were extracted. Results of this questionnaire

¹ The number and composition of spare parts in our market basket varied in each fiscal year of our review period.

showed that extensive edits and validations were built into the structure of the computer system. In addition, the DOD Inspector General and GAO had conducted various reviews of the system, addressing such topics as configuration management, financial integrity, and year 2000 compliance.

We performed our work at DLA headquarters at Fort Belvoir, Virginia, and at DLA's Office of Operations Research and Resource Analysis, Richmond, Virginia. In addition, we interviewed officials and gathered documents from the Defense Supply Centers in Richmond, Virginia; Philadelphia, Pennsylvania; and Columbus, Ohio, as well as the Office of the Under Secretary of Defense in Washington, D.C.

We performed our work from November 1998 to August 2000 in accordance with generally accepted government auditing standards.

Consumable Item Transfer Program

In 1990, the Department of Defense (DOD) created the Consumable Item Transfer program to transfer management responsibility of most weapon system and nonweapon system consumable items from the military services to DLA. The objective of the program was to eliminate duplication of management of consumable items within DOD by consolidating management at DLA. The actual transfer of parts was performed in two phases. Phase I began in fiscal year 1991 and phase II was completed in fiscal year 1999. In total, management responsibility for about 915,000 consumable items was transferred from the military services to DLA. Presently, these transferred items account for about 22 percent of DLA's total inventory of spare parts.

Prior to the transfer, DLA managed about 67 percent of DOD's consumable items. After the transfer, DLA managed about 4 million items, or 93 percent of the Department's consumables. The military services retained responsibility for a small percentage of consumable items that met DOD retention criteria.

The program generated complaints from some military services, which contended that prices increased significantly after DLA assumed management of their consumable parts. We did not analyze price trends for these particular parts because the procurement history database for these items was too limited to make an accurate assessment. According to DLA officials, in many cases, the military services provided them with very limited historical procurement and pricing data for the transferred items. However, two DOD studies did find that prices for transferred parts increased substantially. First, a study¹ conducted by the Army in 1996 revealed that DLA's prices had risen by more than 20 percent from fiscal year 1991 to 1997, after the items had been transferred from the Army. A subsequent study, conducted by DLA in 1997, largely validated these findings and attributed some of the price increases to inaccurate initial provisioning price estimates and exceptionally long periods between procurements.

¹ "Customer-Focused Market Basket," annotated DLA briefing dated July 1997. This briefing contains results of the internal Army study.

Additional Information on Surcharges

Two types of surcharges are computed annually for each DLA hardware center—a composite rate and variable rates. As part of the annual DOD budget process, DLA's Comptroller proposes a composite surcharge rate for each hardware center. This rate is determined by dividing the centers' projected recoverable costs, such as operating costs, by the sales base. The proposed rates are adjusted as necessary by Office of the Under Secretary of Defense (Comptroller) officials, who may add costs that are not directly related to the supply centers' operations. For example, Comptroller officials may direct that accumulated cash in the working capital fund be used to reduce rates or that the composite surcharge rate be increased to generate cash.

Once the composite rates are approved, each supply center establishes variable surcharge rates for the different categories of consumable items managed. These variable rates are used to set the standard price that customers pay. The method for computing the variable rates varies by center and also from year to year.¹ However, each center's variable rates must total up to the approved composite rate. Regardless of which method is used, the overriding goal of each center is to operate on a break-even basis.

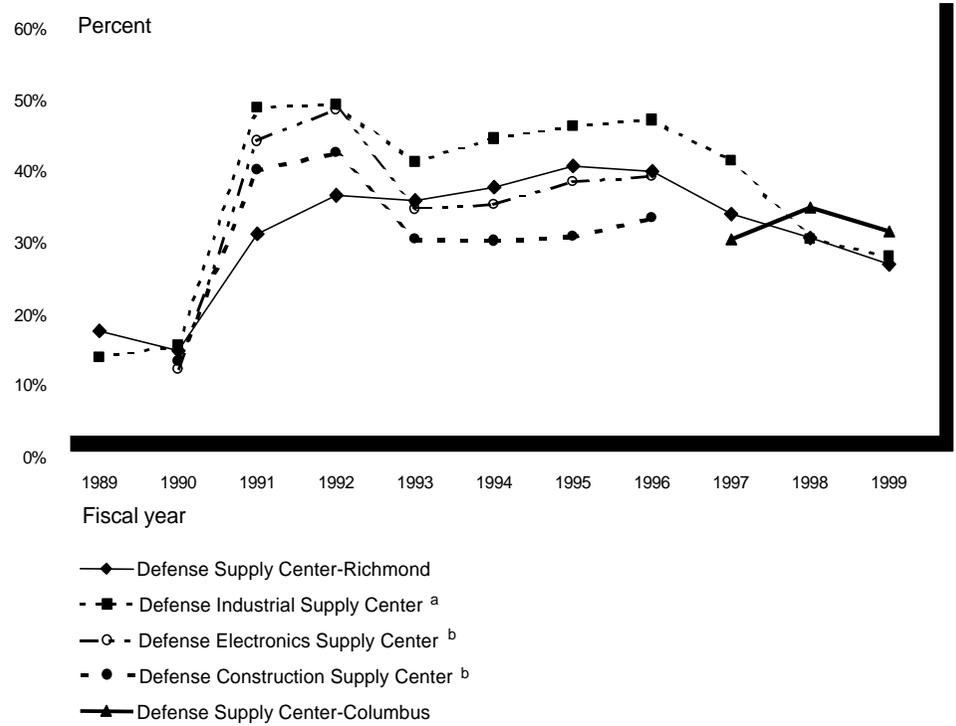
Figure 5 shows the annual composite surcharge rate for each of the three hardware centers for our 10-year review period.²

¹ For example, the Defense Supply Center-Philadelphia computes its rates based on the type of part. It has one variable rate for nuts and washers and another rate for lumber. On the other hand, most variable rates at the Defense Supply Centers in Columbus and Richmond are based on the average dollar value of requisitions they receive.

² Due to the fact that variable rates differ by commodity, supply center, and fiscal year, we could not plot these rates.

**Appendix III
Additional Information on Surcharges**

Figure 5: DLA Composite Surcharge Rates, Fiscal Years 1989 to 1999



^aThe Defense Industrial Supply Center was incorporated into the Defense Supply Center—Philadelphia in July 1999.

^bThe Defense Electronics Supply Center and the Defense Construction Supply Center were merged in January 1996 to create the Defense Supply Center—Columbus.

Average Percent Price Change as Measured by the Mean

Table 3 shows the mean percent price change for parts that had requisitions during our 10-year review period. Under the expenditure-weighted approach, parts with higher requisition value received larger weights and greater emphasis.¹

Table 3: Mean Percent Price Change for Parts Requisitioned by Customers

Fiscal year	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
Simple average	39 ^a	315	103	90	68	306	1,476	388	309
Expenditure-weighted average	48	264	113	147	63	653	19,540	247	568

^aNumbers indicate percentage change from one fiscal year to the next.

Table 4 reflects the price changes, excluding parts with price increases of 1,000 percent or more.

Table 4: Mean Percent Price Change for Parts Requisitioned by Customers (Excludes Parts With Price Increases of 1,000 Percent or More)

Fiscal year	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
Simple average	11 ^a	35	18	4	14	15	18	22	22
Expenditure-weighted average	15	40	19	7	14	15	18	18	20

^aNumbers indicate percentage change from one fiscal year to the next.

¹ Weights were calculated by dividing the requisition value of each spare part into total requisition values for a given year. These weights were then applied to the percentage change in price from the prior year to determine the expenditure-weighted price changes.

Sample of 100 Parts With Price Increases of 1,000 Percent or More

The following is a list of the parts in our random sample of items that had a price increase of 1,000 percent or more in 1998.

Part number	Federal supply class	Name of part	1997 Unit price	1998 Unit price
000589364	5305	Setscrew	\$0.05	\$17.72
004435450	5365	Shim	0.05	56.00
005990523	5331	O-ring	0.27	3.40
006283834	5310	Washer, flat	0.18	2.39
006388237	5306	Bolt, machine	0.28	5.88
006851133	5315	Pin, straight, headless	0.05	1.15
007167725	5305	Setscrew	0.16	5.74
007243439	5305	Setscrew	0.29	10.66
008025136	5360	Spring	0.29	16.18
008373641	5310	Washer, flat	0.02	1.89
008382767	5360	Spring, helical, compression	0.16	9.92
008859720	5306	Bolt, machine	0.46	139.83
009308643	5905	Resistor, variable	5.60	95.88
009372447	5355	Knob	2.36	31.96
009548952	5305	Screw, cap, socket head	1.86	23.32
010039704	3110	Ball, bearing	0.04	11.35
010086028	5961	Transistor	27.12	440.70
010272003	5305	Screw, close tolerance	0.95	24.01
010290061	1560	Plate, structural, aircraft	14.32	236.40
010313629	4710	Tube assembly, metal	348.30	6,989.18
010413070	4730	Tee, tube to boss, aluminum alloy	55.63	1,017.00
010460724	5320	Pin-rivet, threaded	1.42	30.28
010500591	5950	Transformer, radio	683.28	11,700.92
010597589	5340	Cover access	4.10	97.34
010619725	5935	Connector, plug, electric	24.94	306.08
011174774	4320	Plate, thrust, rotary pump	101.00	3,136.09
011212712	5305	Screw cap socket head	0.49	15.43
011288817	5315	Pin, straight headless	22.00	532.39
011312183	5306	Bolt, shear	1.16	17.94
011810876	4720	Hose, nonmetallic	11.65	414.94
011859759	5910	Capacitor	20.63	513.92

**Appendix V
Sample of 100 Parts With Price Increases of
1,000 Percent or More**

(Continued From Previous Page)

Part number	Federal supply class	Name of part	1997 Unit price	1998 Unit price
011931514	5320	Rivet, blind	67.83	1,775.39
011977638	5995	Cable assembly, electrical	43.76	1,214.70
011999015	5905	Resistor network, fixed, film	2.47	156.79
012421475	5340	Strap, retaining	0.02	8.01
012452182	5905	Resistor, fixed, wire wound	0.63	32.21
012555321	5935	Adapter, cable clamp	0.99	117.14
012555392	4320	Pump, hydraulic ram, hand driven	3.10	364.76
012598962	5340	Cap, protective, dust	0.05	15.75
012642986	5962	Microcircuit, digital	3.23	208.44
012644287	5360	Spring, helical, compression	3.09	202.43
012679232	5365	Shim	1.19	552.48
012691835	6220	Lens, light	5.25	65.90
012821586	5365	Spacer, sleeve	1.28	456.14
012939355	6680	Indicator, sight, liquid	28.75	4,214.70
012954939	5999	Shielding gasket	5.49	1,237.81
013023802	4710	Tube, vent, fuselage	81.25	10,080.61
013066164	3040	Hub, body	35.20	14,528.71
013082390	5342	Lock	20.52	358.81
013167468	1650	Block, tube support	0.01	161.83
013196936	5310	Nut, plain, hexagon	0.05	14.67
013366722	5330	Gasket	0.06	16.98
013388158	5305	Screw, shoulder	1.82	63.71
013393297	5305	Screw, machine	0.03	24.68
013395136	5935	Adapter, cable clamp	99.55	1,134.01
013410650	1680	Filter, aircraft	41.96	972.71
013498558	5970	Sleeving, textile	0.13	6.22
013538270	5305	Screw, tapping	0.03	21.68
013545776	5305	Screw, tapping	0.03	17.94
013575767	5310	Washer, slotted	0.02	18.94
013644415	4730	Tee, tube to boss	2.43	945.46
013685397	5340	Base, stand	0.01	871.81
013713142	5307	Stud, ball	0.30	5.05
013730005	5962	Microcircuit, memory	30.30	1,123.79
013777431	1005	Handle, breechblock	7.90	622.40
013787778	5305	Screw, machine	0.25	71.75
013801497	5340	Plug, expansion	0.01	5.06

**Appendix V
Sample of 100 Parts With Price Increases of
1,000 Percent or More**

(Continued From Previous Page)

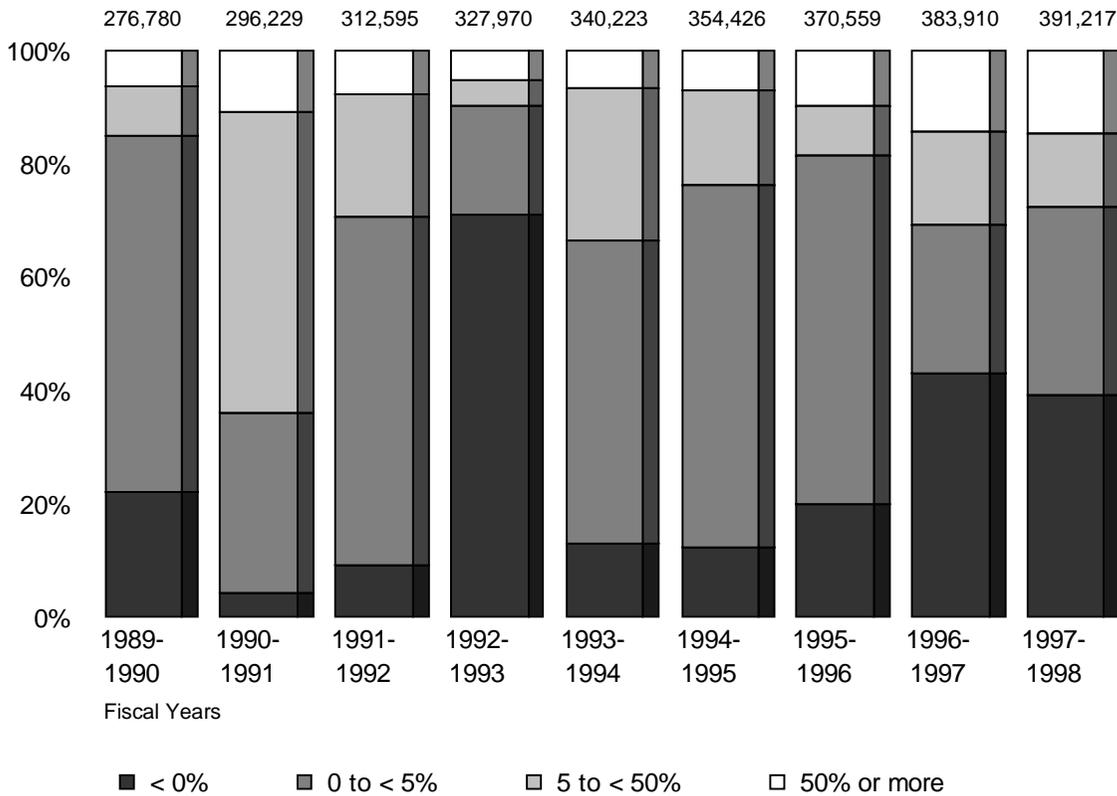
Part number	Federal supply class	Name of part	1997 Unit price	1998 Unit price
013809147	5305	Screw, cap, socket	0.19	33.59
013818680	2540	Insulation, thermal	1.00	3,390.00
013819941	5306	Bolt, machine	0.45	10.56
013838808	5305	Screw, cap, hexagon	0.10	372.02
013913580	5305	Screw, close tolerance	0.46	136.33
013932944	2540	Anchor, drivers hatch	15.38	1,084.80
013958465	6680	Meter, flow rate indicating	5.00	1,511.94
013983743	5331	O-ring	0.09	26.53
013990465	5365	Spacer, sleeve	0.10	744.80
014060751	5962	Microcircuit, linear	0.11	5,788.76
014061680	5340	Bracket, mounting	5.00	3,139.16
014062881	5962	Microcircuit, digital	21.92	802.75
014062973	4730	Clamp, hose	0.32	91.66
014079021	5340	Bracket, mounting	4.57	73.58
014107601	5995	Cable assembly	11.50	5,978.18
014132049	5310	Washer	0.05	182.13
014156970	5310	Nut, plain, hexagon	0.02	1.04
014176659	4730	Tee, tube to boss	25.00	406.80
014180358	5355	Knob	1.20	1,132.20
014180555	5905	Resistor network	1.00	24.60
014207932	4820	Disk, valve	150.00	2,810.99
014218260	5930	Switch, sensitive	4.50	336.29
014250907	5306	Bolt, machine	40.00	1,886.62
014261187	1560	Stiffener, aircraft	125.00	3,416.08
014291232	5975	Panel, electrical	1.00	55.27
014339888	5305	Screw, cap, socket head	0.35	467.81
014350216	4730	Nipple, boss	1.00	1,498.38
014352372	5310	Nut, self-locking	2.69	2,185.50
014352820	3040	Bracket, eye, rotating shaft	0.76	273.35
014360190	5940	Terminal, lug	1.42	638.23
014397927	5963	Oscillator, crystal controlled	1.00	939.71
014442320	5962	Microcircuit, hybrid	10.00	2,745.90
014482771	5305	Screw, machine	0.01	9.34

Price Change for All Items Managed

Figure 6 shows the annual price change for all items managed by DLA over the 10-year period. In fiscal year 1998, customers requisitioned only 236,896 of these items.

Figure 6: Price Change for All DLA-Managed Items

Percent of spare parts



Producer Price Index

Table 5 shows the Producer Price Index inflation rate for the years included in our review. The data are based on the Bureau of Labor Statistics' Producer Price Index commodity group "Intermediate Materials, Supplies and Components," subgroup "Materials and Components for Manufacturing" (series wpusop 2140).

The index for this group tracks commodities that have been partly processed but require further processing to reach the finished goods stage. The subgroup we selected includes items such as motor vehicle parts, electronic components and accessories, motors, and generators. It excludes such items as processed fuels, foods, and feeds.

Table 5: Percent of Change in the Producer Price Index

Fiscal year	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Producer Price Index	115.375	118.350	120.500	121.750	122.750	123.975	125.950	126.800	126.525	126.025	125.750
Percent change		0.0258	0.0182	0.0104	0.0082	0.0100	0.0159	0.0067	-0.0022	-0.0040	-0.0022

Federal Supply Groups in Our Universe

Group 10	Weapons
Group 12	Fire control equipment
Group 14	Guided missiles
Group 15	Aircraft and airframe structural components
Group 16	Aircraft components and accessories
Group 17	Aircraft launching, landing, and ground handling equipment
Group 18	Space vehicles
Group 20	Ship and marine equipment
Group 25	Vehicular equipment components
Group 26	Tires and tubes
Group 28	Engines, turbines, and components
Group 29	Engine accessories
Group 30	Mechanical power transmission equipment
Group 31	Bearings
Group 40	Rope, cable, chain, and fittings
Group 43	Pumps and compressors
Group 47	Pipe, tubing, hose, and fittings
Group 48	Valves
Group 53	Hardware and abrasives
Group 58	Communication, detection, and coherent radiation equipment
Group 59	Electrical and electronic equipment components
Group 60	Fiber optics materials, components, assemblies, and accessories
Group 62	Lighting fixtures and lamps
Group 66	Instruments and laboratory equipment
Group 95	Metal bars, sheets, and shapes

Comments From the Department of Defense



COMPTROLLER
(Program/Budget)

UNDER SECRETARY OF DEFENSE
1100 DEFENSE PENTAGON
WASHINGTON, DC 20301-1100

OCT 10 2000



Mr. Jack L. Brock, Jr.
Managing Director, Acquisition and Sourcing Management
National Security and International Affairs Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Brock:

This is the Department of Defense (DoD) response to the GAO draft report, GAO/NSIAD-01-08, "DEFENSE ACQUISITIONS: Price Trends for Defense Logistics Agency's Weapon Systems Parts," dated September 7, 2000 (GAO Code 707449/OSD Case 2080). The DoD generally concurs with the draft report. The following comments are offered to clarify the DoD position.

The Department agrees to establish a working group with membership representing the Office of the Secretary of Defense, the military services, and DLA to investigate alternatives to current methods and to make recommendations. The working group will be tasked to report its finding back to the Secretary of Defense, as recommended in the draft report, with a July 1, 2001, due date.

Comments on the draft report recommendations are included in the enclosure. The Department appreciates the opportunity to comment on the draft report. Technical comments were provided separately.

Sincerely,

Bruce A. Dauer
Deputy Comptroller (Program/Budget)

Enclosure

GAO DRAFT REPORT DATED SEPTEMBER 7, 2000
(GAO CODE 707449) /OSD CASE 2080

"DEFENSE ACQUISITIONS: PRICE TRENDS FOR DEFENSE LOGISTICS AGENCY'S
WEAPON SYSTEM PARTS"

DEPARTMENT OF DEFENSE COMMENTS
TO THE GAO RECOMMENDATIONS

See p. 17.

RECOMMENDATION 1: The GAO recommended that the Secretary of Defense determine why initial provisioning estimates differ significantly from the price DLA pays upon procuring the item and how to include more accurate initial provisioning estimates in DoD's pricing catalog.

DOD RESPONSE: Concur.

See p. 17.

RECOMMENDATION 2: The GAO recommended that the Secretary of Defense determine a cost-effective method of adjusting catalog prices to account for inflation for items that DLA has not procured in many years.

DOD RESPONSE: Concur. DoD agrees to conduct a review to see if a cost effective method is available.

See p. 17.

RECOMMENDATION 3: The GAO recommended that the Secretary of Defense determine whether estimated and outdated prices can be cost-effectively identified as such in the catalog so that customers will be aware that the prices may be incorrect.

DOD RESPONSE: Concur.

GAO Contact and Staff Acknowledgments

GAO Contact

Karen S. Zuckerstein (202) 512-6785

Acknowledgments

In addition to the name above, Michele Mackin, William M. McPhail, D. Catherine Baltzell, Charles W. Perdue, Julia M. Kennon, Minette D. Richardson, and Richard S. Krashevski made key contributions to this report.

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